

Serial No.: 10/027,226

Confirmation No.: 9039

Filed: 20 December 2001

For: METHODS AND DEVICES FOR REMOVAL OF ORGANIC MOLECULES FROM BIOLOGICAL  
MIXTURES USING A HYDROPHILIC SOLID SUPPORT IN A HYDROPHOBIC MATRIX

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**Remarks**

The Office Action mailed 8 January 2007 has been received and reviewed. Claims 1, 3-28, 30-55, 62-67, and 77-81 are pending. Claims 1, 3-28, and 30-49 have been withdrawn by the Examiner as being drawn to a non-elected group. Consequently, claims 50-55, 62-67, and 77-81 are currently under consideration.

Reconsideration and withdrawal of the rejections are respectfully requested.

**Interview Summary**

Applicants' undersigned representatives thank Examiner Handy for the courtesy of granting a telephonic interview held Monday, April 23, 2007. Applicants' representatives Christopher Gram and Loren Albin participated in the interview on behalf of Applicants.

Claims 50 and 78 were discussed with respect to Dusterhoft et al. (U.S. Patent No. 6,451,260). Agreement on the allowability of the claims under consideration was reached. The substance of the remarks made by Applicants' representatives regarding claims 50 and 78 and rejoinder of withdrawn claims is provided below.

**The 35 U.S.C. §103 Rejections**

Claims 50-52, 64, 65, and 77-81 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nelson et al. (U.S. Patent No. 6,344,326) in view of Dusterhoft et al. (U.S. Patent No. 6,451,260). This rejection is respectfully traversed.

Claims 50 and 78 are the independent claims. Each of claims 50 and 78 recites a device that includes a solid-phase extraction material that includes solid hydrophilic particles partially embedded within a hydrophobic matrix, and further wherein the solid hydrophilic particles comprise molecules different than the hydrophobic matrix. Applicants submit that the combination of Nelson et al. and Dusterhoft et al. cannot render claims 50-52, 64, 65, and 77-81 unpatentable under 35 U.S.C. §103(a) because, at least, the combination of documents fails to

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teach or suggest each and every feature recited in the claims. Specifically, Applicants submit that the suggested combination fails to teach or suggest hydrophilic particles partially embedded within a hydrophobic matrix in which the solid hydrophilic particles comprise molecules different than the hydrophobic matrix.

Dusterhoft et al. reports copolymers made from two different monomer compounds to form a microporous structure. In some cases, one of the monomers is hydrophobic and the other monomer is hydrophilic. The Office Action asserts that the copolymers of Dusterhoft et al. could form a microporous structure in which the hydrophilic portions of the copolymers can form hydrophilic particles embedded in a hydrophobic matrix formed by the hydrophobic portions of the copolymer.

Applicants respectfully submit that Dusterhoft et al. fails to teach or suggest material in which solid hydrophilic particles are molecules that are different than the hydrophobic matrix. Applicants submit that once the hydrophilic monomers and hydrophobic monomers are combined to form a copolymer, the monomers lose their molecular identity. That is, they can no longer be considered hydrophilic molecules and hydrophobic molecules; they are properly considered hydrophilic and hydrophobic segments, respectively, of the larger copolymer molecule. Thus, to the extent that the microporous structure reported in Dusterhoft et al. contains hydrophilic particles, the particles are formed from hydrophilic segments of the larger copolymer molecule that also includes hydrophobic segments that form the hydrophobic matrix—i.e., the hydrophilic particles and hydrophobic matrix are formed from the same molecule, not different molecules.

Because the combination of Nelson et al. and Dusterhoft et al. fails to teach or suggest all of the features recited in the rejected claims, Applicants respectfully submit that the combination fails to set forth a *prima facie* case of obviousness. Thus, Applicants respectfully submit that the rejection of claims 50-52, 64, 65, and 77-81 under 35 U.S.C. §103(a) over Nelson et al. in view of Dusterhoft et al. is improper and should be withdrawn.

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Claim 53 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nelson et al. (U.S. Patent No. 6,344,326) and Dusterhoft et al. (U.S. Patent No. 6,451,260) as applied above, and further in view of Mian et al. (U.S. Patent No. 6,319,469). This rejection is respectfully traversed.

Applicants submit that the combination of Nelson et al., Dusterhoft et al., and Mian et al. cannot render claim 53 unpatentable under 35 U.S.C. §103(a) because, at least, the combination of documents fails to teach or suggest each and every feature recited in the claim. Specifically, Applicants submit that the suggested combination fails to teach or suggest a hydrophilic solid support partially embedded within a hydrophobic matrix in which the solid hydrophilic particles comprise molecules different than the hydrophobic matrix.

The deficiencies of the combination of Nelson et al. and Dusterhoft et al. with respect to the hydrophilic particles being formed from molecules that are different than the hydrophobic matrix are provided above. Applicants respectfully submit that Mian et al. provides no teaching or suggestion that cures the deficiencies of the combination of Nelson et al. and Dusterhoft et al.

Because the combination of Nelson et al., Dusterhoft et al., and Mian et al. fails to teach or suggest all of the features recited in the rejected claim, Applicants respectfully submit that the combination fails to set forth a *prima facie* case of obviousness. Thus, Applicants respectfully submit that the rejection of claim 53 under 35 U.S.C. §103(a) over Nelson et al. in view of Dusterhoft et al., and further in view of Mian et al. is improper and should be withdrawn.

Claims 54, 55, 66, and 67 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nelson et al. (U.S. Patent No. 6,344,326) in view of Dusterhoft et al. (U.S. Patent No. 6,451,260) as applied above, and further in view of Chisolm et al. (U.S. Patent No. 4,399,009). This rejection is respectfully traversed.

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Applicants submit that the combination of Nelson et al., Dusterhoft et al., and Chisolm et al. cannot render claims 54, 55, 66, and 67 unpatentable under 35 U.S.C. §103(a) because, at least, the combination of documents fails to teach or suggest each and every feature recited in the claims. Specifically, Applicants submit that the suggested combination fails to teach or suggest a hydrophilic solid support partially embedded within a hydrophobic matrix in which the solid hydrophilic particles comprise molecules different than the hydrophobic matrix.

The deficiencies of the combination of Nelson et al. and Dusterhoft et al. with respect to the hydrophilic particles being formed from molecules that are different than the hydrophobic matrix are provided above. Applicants respectfully submit that Chisolm et al. provides no teaching or suggestion that cures the deficiencies of the combination of Nelson et al. and Dusterhoft et al.

Because the combination of Nelson et al., Dusterhoft et al., and Chisolm et al. fails to teach or suggest all of the features recited in the rejected claims, Applicants respectfully submit that the combination fails to set forth a *prima facie* case of obviousness. Thus, Applicants respectfully submit that the rejection of claims 54, 55, 66, and 67 under 35 U.S.C. §103(a) over Nelson et al. in view of Dusterhoft et al., and further in view of Chisolm et al. is improper and should be withdrawn.

Claims 62 and 63 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nelson et al. (U.S. Patent No. 6,344,326) in view of Dusterhoft et al. (U.S. Patent No. 6,451,260) as applied above, and further in view of Kellogg (U.S. Patent No. 6,632,399). This rejection is respectfully traversed.

Applicants submit that the combination of Nelson et al., Dusterhoft et al., and Kellogg cannot render claims 62 and 63 unpatentable under 35 U.S.C. §103(a) because, at least, the combination of documents fails to teach or suggest each and every feature recited in the claims. Specifically, Applicants submit that the suggested combination fails to teach or suggest a

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hydrophilic solid support partially embedded within a hydrophobic matrix in which the solid hydrophilic particles comprise molecules different than the hydrophobic matrix.

The deficiencies of the combination of Nelson et al. and Dusterhoft et al. with respect to the hydrophilic particles being formed from molecules that are different than the hydrophobic matrix are provided above. Applicants respectfully submit that Kellogg provides no teaching or suggestion that cures the deficiencies of the combination of Nelson et al. and Dusterhoft et al.

Because the combination of Nelson et al., Dusterhoft et al., and Kellogg fails to teach or suggest all of the features recited in the rejected claims, Applicants respectfully submit that the combination fails to set forth a *prima facie* case of obviousness. Thus, Applicants respectfully submit that the rejection of claims 62 and 63 under 35 U.S.C. §103(a) over Nelson et al. in view of Dusterhoft et al., and further in view of Kellogg is improper and should be withdrawn.

In summary, Applicants submit that claims 50-55, 62-67, and 77-81 are patentable under 35 U.S.C. § 103(a). Allowance of the claims is respectfully requested.

**Obviousness-Type Double Patenting Rejections**

Claims 50-53 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 53 and 56-58 of co-pending Application No. 10/417,609 in view of Dusterhoft (U.S. Patent No. 6,451,260).

Claims 50-53 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 39-42 of co-pending Application No. 10/027,222, issued as U.S. Patent No. 7,192,560, in view of Dusterhoft (U.S. Patent No. 6,451,260).

The provisional rejections are respectfully traversed. The deficiencies of Dusterhoft et al. with respect to the hydrophilic particles being formed from molecules that are different than the

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hydrophobic matrix are provided above. Thus, Applicants submit that claims 50-53 cannot be obvious over the cited co-pending claims in light of Dusterhoft et al.

Applicants respectfully request that the provisional obviousness-type double patenting rejection be withdrawn because the claims 50-53 are not obvious over the cited claims in view of Dusterhoft et al.

**Request for Rejoinder**

Applicants respectfully request that withdrawn claims 1, 3-28, and 30-49 be rejoined. The withdrawn claims recite methods of using devices that include a solid-phase extraction material that includes solid hydrophilic particles of a hydrophilic solid support partially embedded within a hydrophobic matrix, and further wherein the solid hydrophilic particles comprise molecules different than the hydrophobic matrix. Of the withdrawn claims, claims 1, 20, 26, 28, and 47 are independent. Each has been amended during prosecution to include features added to claims 50 and 78. Each of the remaining withdrawn claims depends, directly or indirectly, from claim 1, 20, 26, 28, or 47 and, therefore, includes all of the features recited in the independent claim from which it depends.

Applicants respectfully request that claims 1, 3-28, and 30-49 be rejoined.

**Amendment and Response**

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**Summary**

It is respectfully submitted that the pending claims 1, 3-28, 30-55, 62-67, and 77-81 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

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May 1, 2007  
Date

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**CERTIFICATE UNDER 37 CFR §1.10:**

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Date of Deposit: May 1, 2007

I hereby certify that the Transmittal Letter and the paper(s) and/or fee(s), as described hereinabove, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to: **Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

By: Deb Schurmann Name: Deb Schurmann

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